

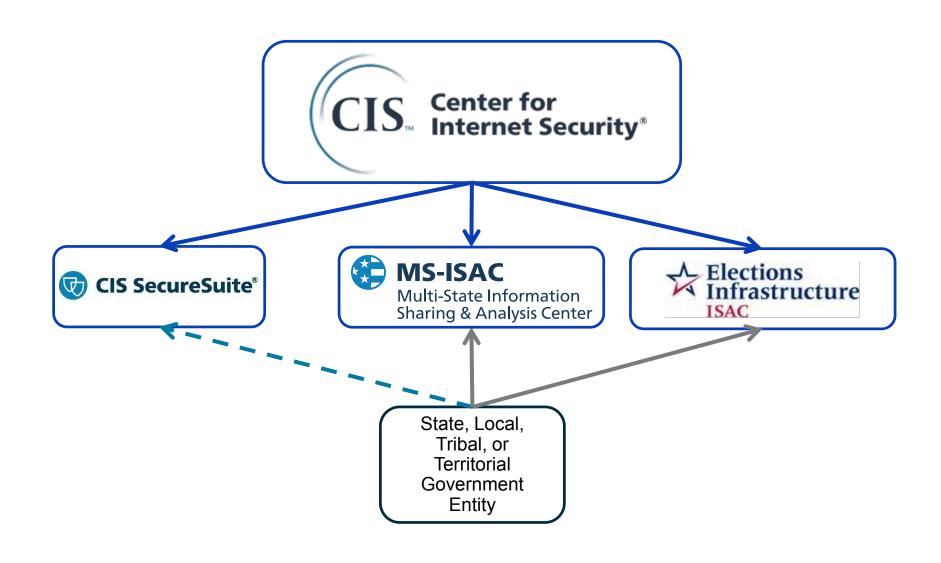


MS-ISAC Services

Cybersecurity Best Practices and Free Resources

Kateri Gill

May 24, 2018







Who We Serve

MS-ISAC Members include:

- All 56 US States and Territories
- All 79 federally recognized fusion centers
- More than 2,800 local governments and tribal nations
 - More than 200 in Texas

State, Local, Tribal, and Territorial

Cities, counties, towns, airports, public education, police departments, ports, transit associations, and more



About MS-ISAC Membership

Free and Voluntary No Mandated Information Sharing One Form to Complete

To join or get more information:

https://learn.cisecurity.org/ms-isac-registration



24 x 7 Security Operations Center

Central location to report any cybersecurity incident

Support:

- Network Monitoring Services
- Research and Analysis

Analysis and Monitoring:

- Threats
- Vulnerabilities
- Attacks

Reporting:

- Cyber Alerts & Advisories
- Web Defacements
- Account Compromises
- Hacktivist Notifications



To report an incident or request assistance:

Phone: 1-866-787-4722

Email: soc@msisac.org



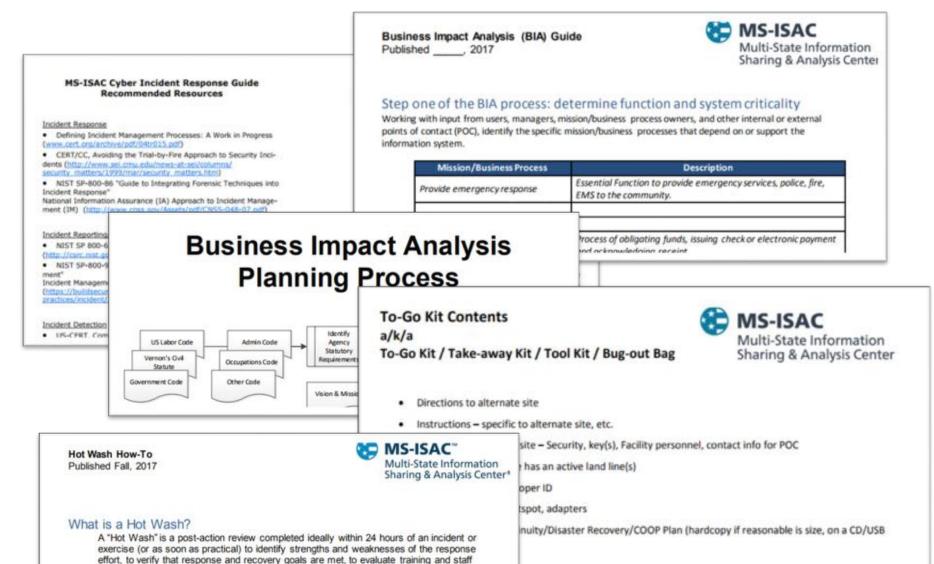


Create an Incident Response Playbook

Best Practice



Incident Response Planning





Computer Emergency Response Team

- Incident Response (includes on-site assistance)
- Network & Web Application Vulnerability Assessments
- Malware Analysis
- Computer & Network Forensics
- Log Analysis
- Statistical Data Analysis

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After Action Review

- Who, What, Why, Where and How it Happened
- The Good, The Bad, and The Ugly
- Incident Response Plan
- Training
- Documentation







Back Up Your Data

Best Practice



National Webcasts

A collaborative effort between DHS and MS-ISAC to provide timely and relevant cybersecurity education and information

- The Working Cloud: Tackling the Security Risks (June 22, 2017)
- The Expanding Attack Surface (April 2017)
- Cybersecurity While Traveling (February 2017)
- Cybersecurity Year in Review and 2017 Preview (December 2016)
- National Cybersecurity Awareness Month Be a Part of Something Big (October 2016)
- State and Local Roundtable Effective Cyber Disruption Strategies (August 2016)

https://msisac.cisecurity.org/webcast/



Cyber Exercises

September 2017 Scenario wer crash and

Last year your organization had lost a large amount of data wh incident response procedures server crash incident occurre procedures once again, and you lost a large sum of data During last year's lessons recovery process left out data loss. Unfortunately updated to address this outcome.

Discussion

MOUL

NIST Functions Addressed; PR.IP-10: Response and recovery plans are tested; RS.IM-1; Response plans incorporate lessons learned; RS.IM-2; Response strategies are updated; RC.IM-1: Recovery place incorporate lessons learned;

- Who would be responsible for updating the response plans and recovery strategies?
- Do you have procedures outlining how to complete an
- What methods do you use within your organization in order to ensure deliverables from your hotwash are completed? Do your change management processes include guidance for updating these procedures?
- Who is responsible for testing your response plans? - Do you run separate tests after updates are made?
 - Have you referenced the MS-ISAC's "How to Hotwash"





Update Your Software and Systems

Best Practice



MS-ISAC Advisories

2017 MS-ISAC Cybersecurity Advisories



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CISCO

HID CORPORATION AND LAND With High Importance.

MS-ESAC Advisory

Thomas Duffy

TLP:

MS ISAC CYBER S



2015-119 - UPDATED

DATE(S) ISSUED:

10/13/2015 10/15/2015 - Updated



SUBJECT:

Multiple Vulnerabilities in Adobe Flash Player Could Allow for Remote Code Execution

OVERVIEW:

Multiple vulnerabilities in Adobe Flash Player could allow remote code execution. Ado experience when visiting web pages or reading email messages. Successful exploitati confidential data, compromising processing resources in a user's computer, or remot

THREAT INTELLIGENCE

There are currently no reports of these vulnerabilities being exploited in the wild.

October 15 - UPDATED THREAT INTELLIGENCE

Adobe is aware of a report that an exploit for the CVE-2015-7645 critical volners

March 2017

#2017-028 » Thursday, March 16, 2017

#2017-027 » Tuesday, March 14, 2017

Multiple Vulnerabilities in Drupal Could Allow for Remote Code Execution

Multiple Vulnerabilities in Microsoft Office Could Allow for Remote Code Execution (MS17-014) #2017-026 » Tuesday, March 14, 2017

Multiple Vulnerabilities in Microsoft Graphics Component Could Allow for Remote Code Execution (MS17-013) * #2017-025 » Tuesday, March 14, 2017 Multiple Vulnerabilities in Microsoft Uniscribe Could A≅ow for Remote Code Execution (MS17-011)

#2017-024 » Tuesday, March 14, 2017

Multiple Vulnerabilities in Microsoft Windows SMB Server Could Allow for Remote Code Execution (MS17-010) #2017-023 » Tuesday, March 14, 2017 A Vulnerability in Microsoft Windows PDF Library Could Allow for Remote Code Execution (MS17-009)

#2017-022 » Tuesday, March 14, 2017 Cumulative Security Update for Microsoft Edge (MS17-007)

#2017-021 » Tuesday, March 14, 2017

Cumulative Security Update for Internet Explorer (MS17-006) #2017-020 » Tuesday, March 14, 2017

Multiple Vulnerabilities in Adobe Flash Player Could Allow for Code Execution (APSB17-07) #2017-019 » Friday, March 10, 2017

Multiple Vulnerabilities in Google Chrome Could Allow for Remote Code Execution #2017-018 » Thursday, March 09, 2017 Yulnerability in Apache Struts Could Allow for Remote Code Execution

#2017-017 » Wednesday, March 08, 2017

Multiple Vulnerabilities in Mozilla Firefox Could Allow for Arbitrary Code Execution #2017-016 » Monday, March 06, 2017 Multiple Vulnerabilities in Google Android OS Could Allow for Remote Code Execution February 2017

#2017-015 » Monday, February 27, 2017

Yulnerability in Microsoft Internet Explorer and Edge Could Allow for Arbitrary Code Execution













CIOFCUD



Monitoring of IP Range & Domain Space

IP Monitoring

- IPs connecting to malicious C&Cs
- Compromised IPs
- Indicators of compromise from the MS-ISAC network monitoring (Albert)
- Notifications from Spamhaus

Domain Monitoring

- Notifications on compromised user credentials, open source and third party information
- Vulnerability Management Program (VMP)

Send domains, IP ranges, and contact info to: soc@msisac.org



Vulnerability Management Program

Web Profiler

What Data Are We Collecting?

- Server type and version (IIS, Apache, etc.)
- Web programming language and version (PHP, ASP, etc.)
- Content Management System and version (WordPress, Joomla, Drupal, etc.)

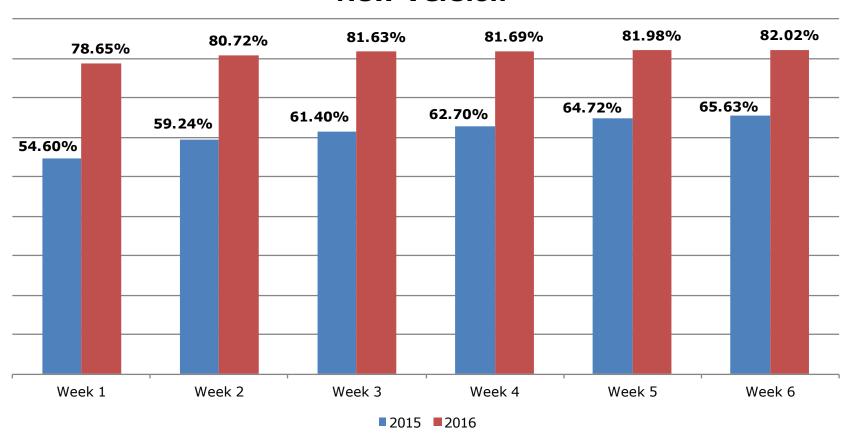
Email notifications are sent with 2 attachments containing information on out-of-date and up-to-date systems:

- Out-of-Date systems should be patched/updated and could potentially have a vulnerability associated with it
- Up-to-Date systems have the most current patches



Time-to-Patch

% of Patched Word Press Instances Following A New Version







Train Your End Users

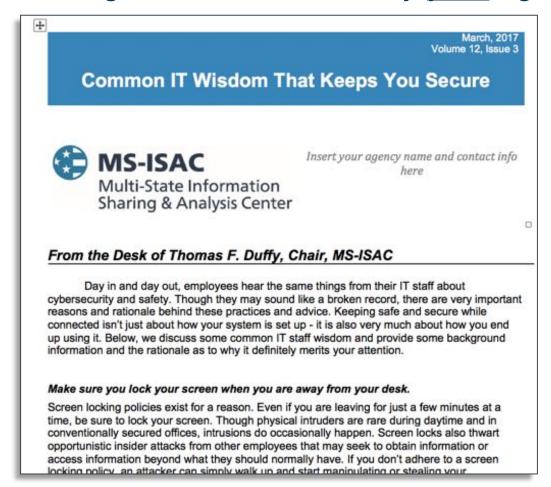
Best Practice

https://www.youtube.com/watch?v=opRMrEfAlil



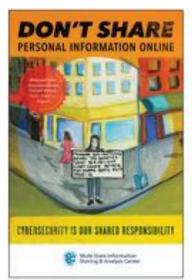
Monthly Newsletter

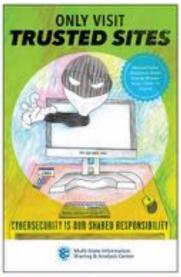
Distributed in template form to allow for re-branding and redistribution by <u>your</u> agency

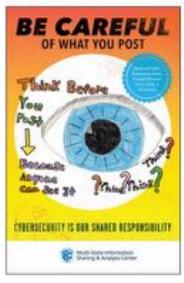


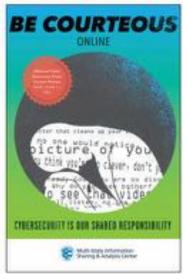


Cybersecurity Awareness Toolkit













EI-ISAC Awareness Products





Denial of Service (DoS) Attacks

What it is: A denial of service attack (DoS) is a cyber attack that originates from a singular source and seeks to disrupt the availability of a system or service. Typically, these attacks target webservers in order to overwhelm the webserver's Internet connection or its ability to respond to user requests. If the attacker can send more requests than permitted by the system, the webserver or Internet connection will be too busy to respond to additional requests, resulting in a "denial of service" to legitimate users until the number of requests returns to normal levels. To increase effectiveness, attackers may use multiple source computers in a distributed denial of service (DDoS) attack. Of note, computers participating in a DDoS attack may be infected with malware that conducts the attack, which means they are also victims of malicious activity.

Why does it matter: Attacks like this could be the result of a politically motivated actor targeting the elections infrastructure or elections infrastructure may be indirectly impacted by targeting against other state/county/city

infrastructure. DoS attacks can also be accidental if time. A well-timed DoS attack near a candidate f accessing online services and/or websites, resultin Products that put elections security topics into context for both technical and executive staff

TLP: WHITE MS-ISAC Elections Pilot Weekly News Alert

TO: All M8-ISAC Elections Community Members

DATE: January 17, 2018

SUBJECT: Elections Pilot Weekly News Alert 1/17/18

The MS-ISAC Elections Pliot Weekly News Alert is a summary of open-source reporting on election security and topics that may be of interest to elections officials. The Weekly News Alert is intended to provide situational awareness of cyber risk landscape and cyber-security best practices to election officials through open source news reporting and analysis by the MS-ISAC and other experts. If you would like to submit security-related stories that may be of interest to the elections community, please contact ten specific isscription.

Senate Bill Seeks Consequences for Future Election Interference - The Hill (1/16/18, 1/12/18)

On January 16, 2017, Senators Marco Rubio and Chris Van Hollen introduced the "Defending Elections from Threats by Establishing Redlines (DETER) Act," which lays out what specific activities to subvert U.S. elections would merit a federal response. The legislation would require the Administration to provide to Congress, within 90 days of enactment, plans to counter potential election interference from specific countries identified as a threat, and a notification to Congress of any foreign election interference within one month after every federal election. The bill also spells out specific penalties for future interference by Russia, such as a requirement to blacklist political figures and impose sanctions on Russia's finance, energy, and defense sectors.

MS-ISAC Analyst Note: The DETER Act acknowledges that nation-state actors are a persistent threat that will continue to target a range of U.S. interests and adds to the



Free Online Training Environment

- CompTIA A+, Network+, Security+
- CISSP Certification Prep
- Operating System Security

www.fedvte.usalearning.gov

Request Account
Request an access email here.





Be Wary of Phishing

Best Practice



Malicious Code Analysis Platform

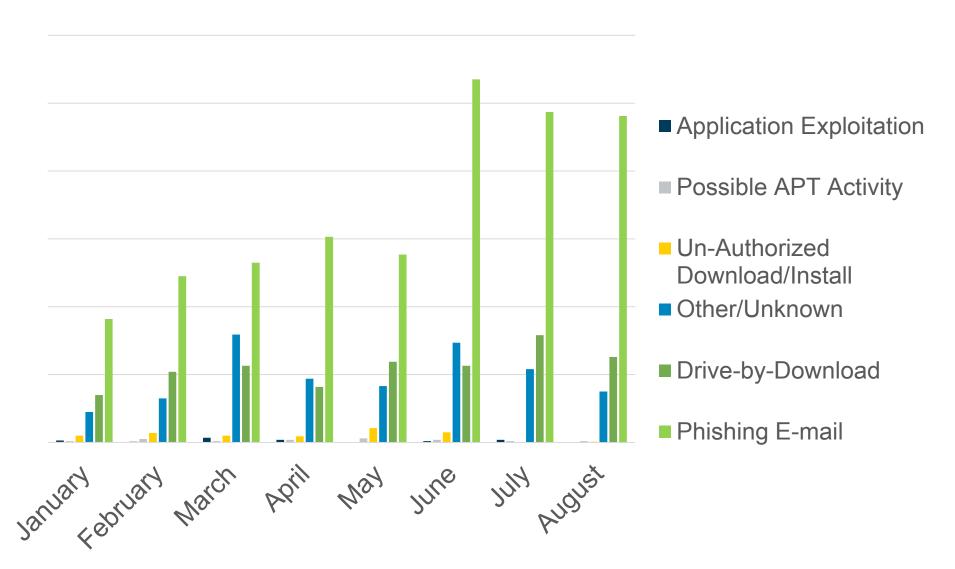
A web based service that enables members to submit and analyze suspicious files in a controlled and non-public fashion

- Executables
- DLLs
- Documents
- Quarantine files
- Archives

To gain an account contact: soc@msisac.org



MCAP Malware Sources By Month





Ukraine's Critical Infrastructure - 2015

- Boryspil International Airport – Kiev, Ukraine
- Power Grid Shut Down
- 80,000 customers lost power for 6 hours
- BlackEnergy Malware
- Attributed to Russia









MS-ISAC Cyber Alerts

MS-ISAC Advisory

Sent: Thursday, June 16, 2016 at 2:57 PM

To: Thomas Duffy

TLP: WHITE MS-ISAC CYBER ALERT

TO: All MS-ISAC Members, Fusion Centers, and IIC partners

DATE ISSUED: June 16, 2016

SUBJECT: Malicious Email Campaign Targeting Attorneys Spoofs Emails From Statewide Legal Organizations - TLP: WHITE

In June 2016 MS-ISAC became aware of a malicious email campaign targeting attorneys, which spoofs emails from statewide legal organizations, such as the Bar Association and the Board of Bar Examiners. The subject and body of the emails include claims that "a complaint was filed against your law practice" or that "records indicate your membership dues are past due." Recipients are asked to respond to the claims by clicking a link which leads to a malicious download, potentially ransomware.

The emails are well written and appear to originate from the appropriate authority, such as an Association official, likely increasing their effectiveness. Reporting from various states indicates a likelihood that this campaign is personalized to individuals practicing in a particular state and may be progressing on a state-by-state basis. The following states have been referenced in public reporting on this campaign: Alabama, California, Florida, Georgia, and Nevada. This targeting may include attorneys working for state, local, tribal, and territorial (SLTT) governments.

Recommendations:

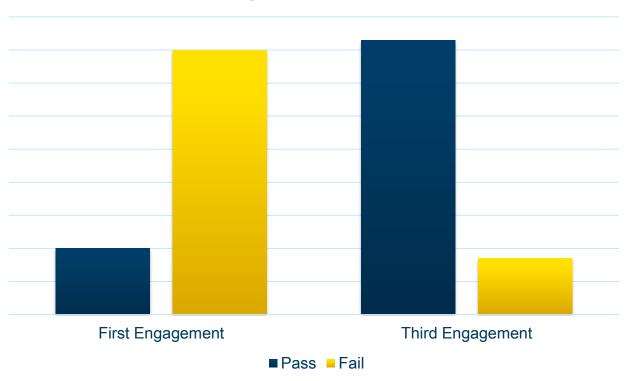
MS-ISAC recommends the following actions:

- Share this information with potentially impacted organizations your area of responsibility, including Departments of Law/Justice, related law enforcement agencies, and agency-specific offices of counsel.
- Train government legal professionals in identifying spear phishing emails which may include spoofed email addresses, unusual requests, and
 questionable and/or masked links. This particular series of emails includes what appears to be a link to the state bar association, but when the user
 hovers over the link it shows that the link is really to a different website. Copying and pasting the link, instead of clicking on it, would defeat this
 social engineering attempt.
- · Perform regular backups of all systems to limit the impact of data loss from ransomware infections. Backups should be stored offline.



Phishing Engagements





Failure Rate is Equal to Percentage of Users Who Clicked the Provided Link





Involve Executives in Cybersecurity

Best Practice



MS-ISAC Annual Meeting

2017-2018 Annual Meeting New Orleans, Louisiana April 9-11, 2018

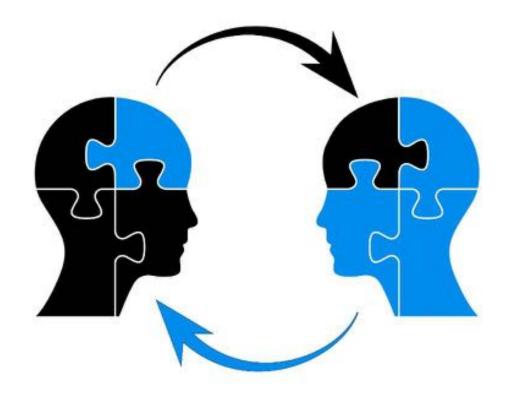






MS-ISAC Mentoring Workgroup

Open call for members every November







Employ a risk-based approach to security

Best Practice

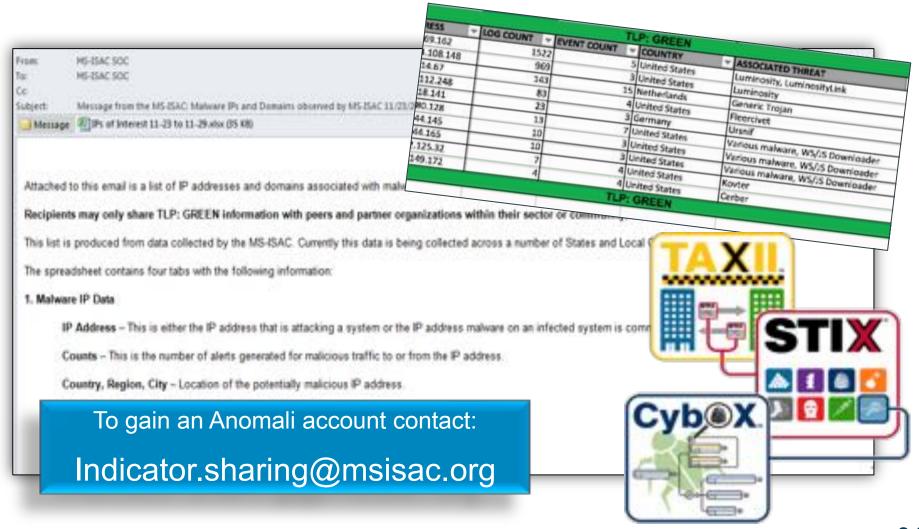


Classic Risk Equation



Weekly Malware IPs and Domains

Automated Threat Indicator Sharing via Anomali

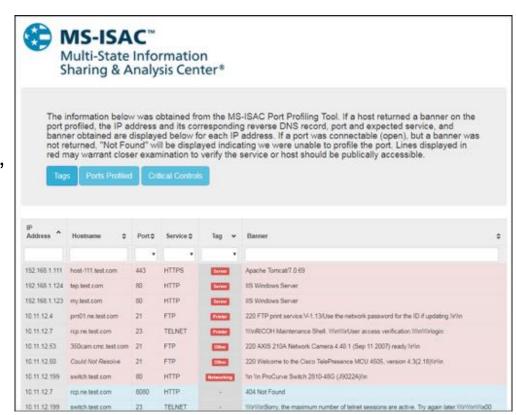




Vulnerability Management Program

Port Profiler

- 12 common ports services identified by reading banner information
 - Services: FTP, SSH, HTTP(S), SMB, RDP, VNC, SQL, and MongoDB
- Quarterly notifications
- Contact vmp.dl@cisecurity.org to:
 - Opt out of this service
- Source IP address: 52.14.79.150





HSIN Community of Interest

Access to:

- MS-ISAC Cyber Alert Map
- Archived webcasts & products
- Cyber table top exercises
- Guides and templates
- Message boards







MS-ISAC Intel Papers

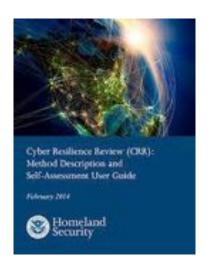




Cyber Resilience Review (CRR)

Self-Assessment or In-Person Interview

- No Cost
- Based on the Cyber
 Resilience Evaluation
 Method and the CERT-RMM





www.dhs.gov/cyber



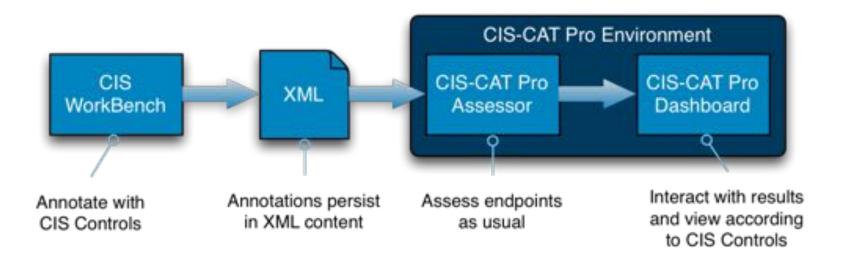
SecureSuite

Workbench

- Platform for creating and maintaining resources
- https://workbench.cisecurity.org

CIS-CAT Pro

- Configuration and Vulnerability Assessment Tool
- Assessor and Dashboard can be downloaded from Workbench





Cybersecurity Best Practices

- Create an Incident Response Playbook
- Back up your Data
- Update Your Software and Systems
- Train your End Users
- Be Wary of Phishing
- Involve Executives
- Take a Risk-Based Approach

40



Questions?







MS-ISAC 24x7 Security Operations Center 1-866-787-4722

SOC@cisecurity.org

https://learn.cisecurity.org/ms-isac-registration

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